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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,261	02/10/2006	Harmannus Franciscus, Maria Schoo	0064.25	5706
25871	7590	09/23/2011		
SWANSON & BRATSCHUN, L.L.C. 8210 SOUTHPARK TERRACE LITTLETON, CO 80120			EXAMINER HO, ANTHONY	
			ART UNIT 2815	PAPER NUMBER
			NOTIFICATION DATE 09/23/2011	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

efspatents@sbiplaw.com

### Office Action Summary

**Application No.**

10/561,261

**Applicant(s)**

SCHOO ET AL.

**Examiner**

ANTHONY HO

**Art Unit**

2815

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 May 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 5) ☒ Claim(s) 22-35 and 42-51 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 22, 23, 27, 29, 35, 42-46, 48, 50 and 51 is/are rejected.
- 8) ☒ Claim(s) 24-26, 28, 47 and 49 is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/8/2011.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 13, 2011 has been entered.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on July 6, 2011 was filed after the mailing date of the Final Rejection on December 14, 2010. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 28 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 28 recites the limitation "said dyes" in line 4 of claim 28. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 48 recites the limitation "said dyes" in line 4 of claim 48. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 22, 23, 27, 29-35, 42, 43, 48, 50, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammer (US Patent 6,002,477) in view of Zhang et al, Gallium nitride/conjugated polymer hybrid light emitting diodes: Performance and lifetime, Journal of Applied Physics, Vol. 84, No. 3, 1 August 1998, pp. 1579-1582.

9. In re claims 22, 34, 35, 42, 43, and 51, Hammer also discloses a detection system having a detector in optical communication with a light source (1) (see Figure 1). Hammer discloses there are at least two detectors in the detection system (i.e. column 2, lines 20-40) (i.e. one of the detectors can be labeled a "signal channel" and the other detector can be labeled "reference channel"). Hammer further discloses these "detectors" simultaneously detects both a "signal channel" and a "reference channel" (i.e. column 2, lines 32-40).

10. Hammer does not disclose a light emitting diode having at least one semiconductive electroluminescent active layer comprising at least one electroluminescent organic compound, which at least one electroluminescent organic compound provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light.

11. However, Zhang et al discloses a light emitting diode having at least one semiconductive electroluminescent active layer, wherein the emission spectrum of the diode exhibits at least two intensity maxima (i.e. see Abstract and Figure 3. Furthermore, biasing voltage determines emission or detection functionality. The intended use or functional language is insufficient to distinguish over applied art) and the active layer comprises at least one electroluminescent organic compound (see Figure 1) that provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light (i.e. Figures 3 and 4).

12. The advantage is to be able to obtain a semiconductor device that lasts longer and is capable of emitting a full range of colors (i.e. Abstract and Introduction).

13. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the detection system as taught by Hammer with a light emitting diode having at least one semiconductive electroluminescent active layer comprising at least one electroluminescent organic compound, which at least one electroluminescent organic compound provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light as taught by Zhang et al in

order to obtain a semiconductor device that lasts longer and is capable of emitting a full range of colors.

14. In re claims 23, 27 and 48, Hammer, as discussed above, does not disclose using one of the listed materials in the semiconductor device.

15. However, Zhang et al discloses using one of the listed materials in the semiconductor device (i.e. Figure 1).

16. The advantage is to be able to obtain a semiconductor device that lasts longer and is capable of emitting a full range of colors (i.e. Abstract and Introduction).

17. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the detection system as taught by Hammer with a light emitting diode having at least one semiconductive electroluminescent active layer, wherein using one of the listed materials in the semiconductor device as taught by Zhang et al in order to obtain a semiconductor device that lasts longer and is capable of emitting a full range of colors.

18. In re claims 29-33, Hammer, as discussed above, does not show the emission of at least two intensity maxima and their differences between them.

19. However, Zhang et al shows the emission of at least two intensity maxima and their differences between them (i.e. Figure 3).

20. The advantage is to be able to obtain a semiconductor device that lasts longer and is capable of emitting a full range of colors (i.e. Abstract and Introduction).

21. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the detection system as taught by Hammer with a

light emitting diode having at least one semiconductive electroluminescent active layer, wherein the emission of at least two intensity maxima and their differences between them as taught by Zhang et al in order to obtain a semiconductor device that lasts longer and is capable of emitting a full range of colors.

22. In re claim 50, the recitation "wherein the detection system is a miniaturized sensor system" in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

23. Claims 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammer (US Patent 6,002,477) in view of Zhang et al, Gallium nitride/conjugated polymer hybrid light emitting diodes: Performance and lifetime, Journal of Applied Physics, Vol. 84, No. 3, 1 August 1998, pp. 1579-1582 as applied to claim 22 above, and further in view of Dickert et al, "Solvatochromic betaine dyes as optochemical

sensor materials: detection of polar and non-polar vapors," *Sensors and Actuators B*, 70, (2000), 263-269.

24. Hammer as modified by Zhang et al, as discussed above, does not disclose a suitable coating for polar and non-polar vapors in a sensor device.

25. However, Dickert et al discloses a suitable coating for polar and non-polar vapors in a sensor device (i.e. Introduction).

26. The advantage is to optimize the sensor behavior of the sensor device (i.e. Abstract).

27. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the detection system as taught by Hammer as modified by Zhang et al with a suitable coating for polar and non-polar vapors in a sensor device as taught by Dickert et al in order to optimize the sensor behavior of the sensor device.

### ***Response to Arguments***

28. Applicant's arguments filed May 13, 2011 have been fully considered but they are not persuasive.

29. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., only the electroluminescent organic compound provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light) are not recited in the rejected claim(s). Although the claims are interpreted in light of the



specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

30. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

#### ***Allowable Subject Matter***

31. Claims 24-26, 28, 47, and 49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

32. The following is a statement of reasons for the indication of allowable subject matter: The prior arts of record do not disclose or suggest at least the limitations of "a detection system wherein the LED comprises an electroluminescent polymer and an electroluminescent single dye" as recited in claim 24, "a detection system wherein at least two different intensity maxima of the different wavelengths are emitted by a first and a second organic electroluminescent compound, wherein the first organic electroluminescent compound has a maximum in the emission spectrum at a different wavelength than the second compound" as recited in claim 25, "a detection system wherein the at least two different intensity maxima of the different wavelengths are emitted by one organic electroluminescent compound" as recited in claim 26, "a

detection system wherein the light emitting diodes and the detector are present on or in a carrier material, wherein the carrier material is flexible" as recited in claim 47, and "a detection system wherein at least one electroluminescent compound is selected from the group of polyacetylene compounds, polythiophene compounds, polypyrroles, polyanilines and copolymers of these polymers" as recited in claim 49.

33. Claim 28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

34. The following is a statement of reasons for the indication of allowable subject matter: The prior arts of record do not disclose or suggest at least the limitation of "a detection system wherein at least one electroluminescent compound is selected from a group consisting of polyfluorene compounds, copolymers of said polyfluorene compounds and polymers derivatized with one or more of said dyes" as recited in claim 28.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY HO whose telephone number is (571)270-1432. The examiner can normally be reached on Monday to Friday: 10AM - 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anthony Ho/  
Examiner, Art Unit 2815